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ABSTRACT

Ohio Wesleyan University has demonstrated that a small private college can apply cost accounting to instructional activities. For more than six years, Ohio Wesleyan has calculated the unit cost of instruction per student and per credit until for each individual course section as well as the average unit costs for each academic discipline. Only instructional costs are included; support costs are not allocated to the academic disciplines. This data has become a factor in the decision-making process and usually serves to raise questions, not provide answers. The four instructional cost reports used by the University are described: faculty compensation analysis; instruction department cost grouping; course cost report; and instruction discipline cost report. The data was first used by the ad hoc Long Range Planning Committee to establish objectives for the 1970s and the committee's recommendations reflected the data. It has continued to be used for multiyear comparisons and has pinpointed areas and programs that need change. (JMF)

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# Cost Accounting in an Academic Community: A Small College Approach

by Keith W. Mathews

The idea of calculating the unit costs of instruction is far from new, but it is still controversial. For that reason, the experience of Ohio Wesleyan University — which has been applying cost accounting to instructional activities for more than six years — may be of interest to other institutions.

This paper approaches the subject from the point of view of the small, private college. Much of the work that has been accomplished in this area has taken place at large, public institutions. Administrators at all institutions with U.S. government research grants have learned to cope with OMB Circular A-21, but calculating indirect costs for grants is really quite different from the subject discussed here.

At Ohio Wesleyan, the unit cost of instruction is calculated per student and per credit unit for each individual course section. The average unit costs for each academic discipline are also calculated. By academic discipline is meant course offerings grouped according to classifications of the Higher Education General Information Survey of the U.S. Office of Education (HEGIS). Only instruction costs are included; support costs are not allocated to the academic disciplines.

### *Ingredient in Decision Making*

This information is reported to appropriate administrators and faculty committees for their use in making decisions. These people have found the data to be generally useful as one ingredient in the decision-making process. Cost data by itself usually serves to raise questions, not provide answers. Combined with other pertinent information however, it helps to present a comprehensive view of a particular activity.

Ohio Wesleyan is a private, coeducational, liberal arts college located in Delaware, Ohio. It offers five degree programs, but most of the students pursue the Bachelor of Arts degree. The enrollment totals about 2200, and two-thirds of the students come from out of state. Operating expenditures total $11,000,000. Of that, $8,000,000 is for educational and general purposes and $3,000,000 is for auxiliary enterprises.

Ohio Wesleyan has a very strong tradition of academic freedom and shared governance. The 165 faculty members have primary responsibility for the curriculum, academic standards, and faculty employment policies. The Faculty Committee on University Governance, a standing committee, works with the administration on fiscal planning and budgeting. This committee has reviewed the unit cost data. Two ad hoc committees also worked with the data during the six-year period. They were a Long Range Planning Committee and a committee formed to deal with enrollment decline.

### *National Instructional Costing*

The subject of instructional costing has received national attention during the 1970s. Persons active in higher education administration are aware of the work of the National Commission on the Financing of Postsecondary Education, the National Center for Higher Education Management Systems (NCHEMS), and NACUBO.

In 1972 Congress created the National Commission on the Financing of Postsecondary Education. When the Commission completed its work in 1973 and issued a comprehensive report, one recommendation pertained to the subject of instructional costing. It stated that the "Federal Government should provide continuing leadership in encouraging and developing national standard procedures appropriate to each type of institution, for calculating the direct, indirect, and full annual cost of instruction per student by level and field of study."[1]

The federal government has been financing much more extensive work on costing procedures by NCHEMS, which is trying to develop uniform costing procedures that would

[1] The National Commission on the Financing of Postsecondary Education, *Financing Postsecondary Education In the United States*, (Washington, D.C., U.S. Government Printing Office, 1973), pp. 339, 340.

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serve three broad purposes — improving capabilities for internal management, facilitating interinstitutional data exchange, and improving capabilities for external agency reporting. Two NCHEMS reports on this subject are the *Cost Analysis Manual* (Field Review Editon) and *Information Exchange Procedures* (Technical Report 65).

**Cost data by itself usually serves to raise questions, not provide answers. Combined with other pertinent information, however, it helps to present a comprehensive view of a particular activity.**

After reviewing the technical report, NACUBO recently began with NCHEMS a Joint Revision Project for the purpose of revising the report to make the procedures useful for internal management. The problem of external cost comparison is much more difficult, because of methodological differences in the application of costing procedures (among institutions) and also because of functional differences in programs and support activities. A more complete discussion of these problems may be found in NACUBO's Administrative Service chapter 4:5, "Fundamental Considerations for Determining Cost Information in Higher Education."

### *OWU Instructional Costing*

From an accounting systems viewpoint, the work at Ohio Wesleyan has been much less ambitious than the efforts mentioned above, and therefore much easier. A limited purpose system was developed for calculating instructional unit costs. The data was needed for internal use, and university administrators were not willing to wait for uniform national procedures. In fact, in 1971 the ad hoc Long Range Planning Committee was waiting for the first printouts from the system.

Since external comparisons were not a goal, administrators at Ohio Wesleyan didn't have to concern themselves with standard definitions or with crossovers to a standard chart of accounts. A costing subsystem was created which functions as an integral part of the overall computerized information system. A computerized data base already existed which contained nearly everything needed for the cost calculations.

Computer programs were written to extract data from registration, payroll, and accounting disk records. The computer writes the extracted data on a cost record disk. Other programs then cause the computer to make calculations and print four reports, a Faculty Compensation Analysis, an Instruction Department Cost Grouping, a Course Cost Report, and a Discipline Cost Report. Multiyear comparisons of unit costs are manually prepared from the Discipline Cost Report.

These reports are not the only financial data available, of course, nor is attention focused solely on the instructional area. The computerized information system includes a complete responsibility accounting subsystem and another costing subsystem for physical plant operation. The responsibility accounting subsystem provides reports of controllable expenditures with budget comparisons, aggregated to three levels — department chairperson or supervisor, vice president, and president. The costing subsystem for physical plant operation provides costs of individual work orders and aggregate and square foot costs of maintaining individual facilities (buildings, campus areas, and utility systems).

For information on the operational details of the instructional costing subsystem, the reader is referred to "Instructional Costing at Ohio Wesleyan," published by NACUBO in December 1974, as part of the *Studies In Management* series.

### *Instructional Cost Reports*

Following is a brief description of the four reports mentioned above; they are related to some NACUBO and NCHEMS ideas.

*Faculty Compensation Analysis.* This is a load study with cost figures added. It presents the instructional load of each faculty member, listing each course number and title, along with the enrollment, amount of student credit, faculty load credit, and meeting time. It also contains each faculty member's total compensation, with an amount of compensation apportioned to each course on the basis of load credit. The compensation figure includes salary and all vested fringe benefits (the same figure used for the AAUP survey).[2] The fringe benefits include TIAA/CREF pension premiums and the usual group insurances.

One problem in preparing reports of this nature is deciding the basis of faculty load credit. Should official assignments be used, or should a time and effort survey be utilized? NCHEMS designed a complex survey instrument, the Faculty Activity Analysis, but NCHEMS procedures do not require its use. It is said that assignments represent an acceptable basis. Actually, many institutions have encountered faculty resistance to survey instruments. In the case of Ohio Wesleyan, assignments were selected as the basis because of the relative simplicity of the situation. Ohio Wesleyan is a teaching college. Each faculty member is supposed to teach seven courses. Other activities are secondary to the teaching role.

[2] American Association of University Professors, "The Annual Report on the Economic Status of the Profession," published annually in the summer issue of *AAUP Bulletin.*

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Some faculty members have assignments other than actual course sections that count toward the load of seven. Examples include teaching private music lessons, coaching athletic teams, directing the academic computer center, coordinating off-campus studies, and serving as departmental chairpersons. These assignments (as well as leaves) are included in the Faculty Compensation Analysis in the same manner as course sections, with compensation apportioned to them.

A major costing problem at complex institutions is the handling of joint costs, where instruction, research, and public service are each significant in scope but also closely interrelated. NCHEMS has worked on this problem, but, to date, has not been able to satisfy the deans and faculties of the principal research universities. It has been concluded that the joint cost problem is immaterial at Ohio Wesleyan. Teaching is the primary activity; research and public service complement instruction. Therefore, no attempt is made to assign costs to those activities or to other

**. . . the joint cost problem is immaterial at Ohio Wesleyan. Teaching is the primary activity; research and public service complement instruction.**

complementary roles, such as advising and committee work. Sponsored research and institutes are excluded from the costing procedures entirely.

*Instruction Department Cost Grouping.* This is a reference schedule, in which expenditures are combined which are direct to instruction departments but indirect to courses and disciplines. Included are faculty compensation apportioned to the chairperson assignments and to leaves, as well as departmental expenditures for clerical help, materials and supplies, and expendable equipment.

*Course Cost Report.* This lists the individual course sections, number and title, grouped by level of instruction and by academic discipline. Two instruction levels are used: freshman-sophomore and junior-senior. Ohio Wesleyan offers no graduate work. For each course section, reports are made on faculty compensation, allocated department cost (the indirect instruction costs grouped in the previously discussed report), total cost, enrollment, student credit, and cost per student. Also included, for reference, are the class meeting time and the seating capacity of the classroom. This report includes totals and averages for each discipline and for the two instruction levels within each discipline. Average unit costs are calculated per student and per credit unit.

No support costs are allocated to courses or disciplines. By support costs are meant, of course, expenditures for library, academic administration, student services, institutional support, educational plant operation, or student aid grants. NCHEMS procedures do allocate support costs as well as an imputed cost for depreciation of facilities. Since objectives at Ohio Wesleyan are more limited than theirs, it is felt that such allocations would be counter-productive. They would tend to obscure instructional performance, which is exactly what is being evaluated. Supporting activities are examined separately.

One possible future exception is a charge to academic disciplines for space usage. The addition of this item is provided for in the reports. It would be informative if it were a realistic charge, derived from the physical plant operation costing subsystem. An allocation would not be made based only on overall floor space.

*Instruction Discipline Cost Report.* This is a summary of discipline and course level totals and averages from the Course Cost Report. In many cases, the academic discipline groupings correspond to the departmental structure. In other cases, however, more than one discipline are combined into a single department, for budgeting and organizational convenience. For evaluation and decision making, the discipline groupings are more indicative of the instructional program than the departmental structure.

NCHEMS procedures go a step farther, and calculate costs per student major. This step is not taken at Ohio Wesleyan. As a liberal arts college, its requirements for a major do not constitute a majority of a student's courses. Furthermore, students are encouraged to explore a wide range of interests. It is believed that the average costs of a major are not as significant as the costs of the various discipline offerings.

### *Uses of Instructional Unit Cost Data*

The first group to work with Ohio Wesleyan instructional unit cost data was an ad hoc Long Range Planning Committee, composed of faculty members (a majority), administrators, and students. President Thomas Wenzlau appointed this committee in December 1970, and gave it the following charge: "To develop and articulate a set of objectives for Ohio Wesleyan for the 1970s and to prepare a consistent and integrated program for obtaining those objectives." The committee had less than a one-year life. During that brief period the members examined and evaluated a vast amount of data, including the first set of reports from the instructional costing subsystem. Those reports covered the fiscal year ended June 30, 1970.

The cost data had a definite impact on the committee's thinking and recommendations. This can best be illustrated by a brief quote from the final report, issued October 11, 1971. The following specific recommendations were included in the report:

1. A "full-load" policy should be based on the present course rule. (Deviation from this rule is an important element explaining the very high per student costs in some areas.)

2. Courses with very few students should be combined, staggered, or cancelled.

3. A continuing effort should be made to reappraise course equivalences for professors in areas of student ac-

tivity (such as intercollegiate sports, music, drama, debate), since these are areas of high cost.

4. Each professor and department chairman should receive, in confidence, a statement of facts concerning costs incurred and graduation units earned in the area of his reponsibilities.

5. An explicit college policy should be established that voluntary severances (quits, retirements, etc.) *not* be replaced until and unless authorized by the vice president for academic affairs with the advice and consent (by majority vote) of the faculty personnel committee. In general, programs involving high cost per graduation unit should not be allowed to replace severances.

Since the committee had cost data for only one fiscal year, the members could not totally distinguish trends and established situations from one-time fluctuations. For this reason, the recommendations were general, and in the future tense. In the following years, the vice president for academic affairs, Robert Lisensky, (who was also chairman of the Long Range Planning Committee) played a key role in carrying out the committee's recommendations. He made use of cost data on a routine basis, and he also helped prepare the data. Specifically, he reviewed the initial reports each year with the departmental chairpersons, asking questions about loads and uncovering any errors that existed in the data base. Following this, corrections were made and revised reports were presented to the Faculty Committee on University Governance.

**Resource allocation is in-depth analysis of objectives, costs, and income attached to the various programs.**

Annual preparation was begun (by this writer) of multiyear comparisons of the average cost per credit unit by academic discipline. Also included was a quartile rank for each discipline in a second set of columns. There now exists a six-year comparison. The disciplines are grouped under the broader headings found in the HEGIS taxonomy (such as biological sciences, social sciences, fine arts, etc.). A quick examination of the multiyear comparisons (with particular attention to quartile rankings) reveals trends and also reveals any discipline out of line in its own grouping. Everyone knows, for example, that the physical sciences are more expensive than the social sciences. But what about one social science discipline trending upward from the second to the fourth quartile, while all other social sciences remain in the first quartile? That means trouble, and it happened at Ohio Wesleyan! (Corrective steps have been taken.)

Dr. Lisensky left Ohio Wesleyan in 1974. He has since described the work at the university in an article titled "Resource Allocation as a Vehicle for Change" in the May 1975 issue of *Liberal Education*. The two paragraphs quoted below are taken from the article, and seem to sum up his feelings about the use of the data:

> Although the insights are few, verification of expectations was valuable. The extreme costs of lower level science courses with their laboratories introduced vigorous debates (costs of $263 per graduation unit compared with $71 per student). We were forced to compare true income rather than use faculty credits for teaching. The three-year comparison charts indicate that attempts were made to respond to the needs for efficiency and effectiveness of program. We attempted always to evaluate the discipline rather than individuals. This provided a more objective look at strengths and weaknesses because we evaluated programs, not individuals. The latter are a most elusive target.

> Resource allocation is in-depth analysis of objectives, costs, and income attached to the various programs. However, to make the decisions that flow from these data operational, there needs to be a governance system based on a consultative or community model. Otherwise, the dual organizational system will demonstrate its ability to impede rather than to initiate action.

In fiscal year 1975 this work took on a new urgency. The enrollment at Ohio Wesleyan suddenly dropped almost 10 percent, after having held steady for several years. The 1970-71 Long Range Planning Committee had foreseen an enrollment decline, but everyone had thought it would be gradual. President Wenzlau appointed several new ad hoc committees to study the situation and make recommendations. One committee, composed entirely of faculty members, studied the instructional program. This committee pinpointed certain specific disciplines to be reduced through voluntary attrition.

In carrying out their difficult tasks, this faculty committee considered the unit cost data as one element of information. They also studied enrollment data, and even grading patterns to see if anyone was building enrollment by grading high. They also visited departments and talked to the faculty about majors, service courses, and other instructional roles. From all of this they were able to build a reasonably clear picture of the needs of the various disciplines. According to the chairman, the cost data consistently confirmed the impressions they received from other sources.

In summary, at Ohio Wesleyan both administrators and faculty committees accept instructional unit cost data as one useful ingredient in the decision-making process. According to President Wenzlau, its importance increases as financial difficulties increase. It is his wish that the development of this data continue, with no significant changes from the present formats.

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